REMARKS

This Amendment is filed in connection with a Request for Continued Examina-
tion in response to the Final Office Action mailed Oct. 29, 2007 and the Advisory Action
mailed Jan. 31, 2008. The Applicant respectfully requests reconsideration of the rejec-
tions in light of the below discussion. All rejections are respectfully traversed.

Claims 1-35 and 41-48 are now pending in the case.

Claims 1,5, 6, 10, 11, 14,15, 23, 27, 29, 35, 41 and 43 have been amended.

Claims 45-48 have been added. As discussed further below, these new claims are
believed to be allowable over the prior art of record as they include novel features absent
from the prior art.

Claim Rejections – 35 U.S.C. §103

At paragraphs 1-3 of the Final Office Action, claims 1, 2, 4, 6, 7, 9, 11, 13, 17 and
19 and 41-44 were rejected under 35 U.S.C. §103(a) over Azuma et al., U.S. Patent No.
6,430,150 (hereinafter "Azuma") in view of Vaman et al., U.S. Patent No. 6,011,780
(hereinafter "Vaman").

The Applicant's claim 1, representative in part of the other rejected claims, sets
forth:

> 1. A method for operating a node in a computer network, the node con-
> nected to other nodes by links, comprising:
>   determining a path to a destination, the path including one or more
> links;
>   determining at least one alternate path having at least some of its
> one or more links differing from the links of the path;
>   *reserving bandwidth for said at least one alternate path*;
>   *subsequent to reserving bandwidth, detecting a link failure on
> the path*; and
>   rerouting traffic on said at least one alternate path in case of a link
> failure.

Azuma discloses a technique for restoring service across a network when a link or node fails. "In the event of a failure in the link or the node, the node adjacent to the location of the failure broadcasts a message to the other nodes in the network to indicate where the failure has occurred. Using the received message, each node performs the computation for finding alternate paths so as to restore the telecommunication path for itself." *See* col. 4, line 67 to col. 4, lines 6 and col. 2 lines 3-21. After a link failure and computation of an alternate path, a "cross-connection phase" is initiated where resources are reserved along the alternate path, and service switched to it. *See* col. 4, line 62 to col. 5, line 8.

Vaman discloses a technique for restoring a virtual path in response to a resource failure. Vaman begins by "setting a primary path and a secondary path between nodes of a network." *See* col. 8, lines 17-20. "The primary path has the necessary bandwidth reserved for the connection. **The secondary path does not reserve any bandwidth** but serves as a logical assignment." *See* col. 10, lines 22-24 (emphasis added). That is, "[t]he **secondary path has VP labels and does not have any bandwidth reservation**" until later. *See* col. 10, lines 63-66. "When a particular domain though with a primary path is established either experiences congestion or has a resource failure, then service provisioning is switched to the domain that provides the secondary path. Management actions are needed…for bandwidth reservation on the secondary path." *See* col. 10, lines 28-34. Thus, bandwidth reservations for the secondary path occur subsequent to a failure.

The Applicant respectfully urges that neither Azuma, nor Vaman, teach or suggest the Applicant's claimed "*reserving bandwidth for said at least one alternate path*" and "*subsequent to reserving bandwidth, detecting a link failure on the path.*"

Unlike conventional techniques, the Applicant reserves bandwidth for at least one alternate path **prior to** detecting a failure along the primary path. In this manner, the alternate path is largely already "set up" and can be activated far more rapidly than conventional alternate paths. The Applicant respectfully directs the Examiner's attention to Fig.

15

13, which details an initial allocation process for alternate paths. In particular, box 1307 indicates bandwidth is reserved, by reducing available bandwidth on an alternate path, during the initial allocation, before a failure is even detected.

There appears to be agreement that Azuma does not disclose this aspect of the Applicant's claims. *See* Office Action page 4 (stating "Azuma fails to clearly mention the method of *subsequent to reserving resources, detecting a link failure on the path*"). Indeed, Azuma does not even find alternate paths until after a failure is detected. *See* Azuma col. 4, line 67 to col. 4, lines 6 and col. 2 lines 3-21.

The Office Action then turns to Vaman. However, Vaman teaches away from what the Applicant claims. Vaman teaches that one should only reserve bandwidth for an alternate path after a link failure of a primary path is detected, not before. Vaman specially states "[t]he secondary path **does not** reserve any bandwidth but serves as a logical assignment." *See* Vaman col. 10, lines 22-24 (emphasis added). Vaman reiterates, "[t]he **secondary path** has VP labels and **does not have any bandwidth reservation**" while it is serving as a backup. *See* Vaman col. 10, lines 63-66. Only after a failure along the primary path, when the secondary path is coming into use, does Vaman use certain "management actions" to reserve bandwidth for the secondary path. *See* Vaman col. 10, lines 28-34. Such management actions needed to reserve bandwidth after a failure is detected would clearly introduce delays. Thus, if one of skill in the art followed the teachings of Vaman, they would be lead astray from the Applicant's innovations.

Accordingly, the Applicant respectfully urges that the combination of Azuma and Vaman is legally insufficient to make obvious the present claims under 35 U.S.C. §103(a) because of the absence of, and teachings away from, the Applicant's claimed novel "*reserving bandwidth for said at least one alternate path*" *and* "*subsequent to reserving bandwidth, detecting a link failure on the path.*"

At paragraph 4-5 of the Office Action, claims 3, 5, 8, 10, 12, 14-16, 18, and 20-35 were rejected under 35 U.S.C. §103(a) over Azuma in view of Katzela et al., U.S. Patent No. 5,872,773 (hereinafter Katzela) in further view of Vaman.

Claims 3, 5, 8, 10, 12, 14, 18, and 20 are dependent claims that dependent from independent claims believed to be allowable for the reasons discussed above. Accordingly, claims 3, 5, 8, 10, 12, 14, 18 are believed to be allowable due to their dependency, as well as for other separate reasons.

The Applicant's claim 21, representative in part of claims 15-16 and 21-35, sets forth:

> 21. A method of non-disruptive packet switching in a network having nodes interconnected with transmission trunks, said method comprising:
>
> pre-selecting at least on alternate path for each trunk;
>
> reserving connections at each node to make said at least one alternate path;
>
> *reserving bandwidth resources to transmit packets on said at least one alternate path;*
>
> subsequent to steps of sending and reserving, *detecting a failure of a particular trunk*;
>
> switching the path of a packet from said particular trunk, in response to failure of said particular trunk, to said at least one alternate path; and
>
> re-selecting at least one new alternate path for each trunk in response to user traffic, network resources, and quality of service changes.

Katzela simply discloses a wireless communications network where cells are routed according to virtual path identifiers (VPIs). *See* abstract.

The Applicant respectfully urges that the combination of Azuma, Katzela and Vaman does not teach or suggest the Applicant's claimed "*reserving bandwidth resources to transmit packets on said at least one alternate path*" and "*subsequent to the*

reserving connections and reserving resources, detecting a failure of a particular trunk."

As discussed above, neither Azuma, nor Vaman reserve bandwidth resources for an alternate path **prior to** detecting a failure on the primary path. Katzela in no way remedies the deficiencies of Azuma and Vaman, being silent on the topic.

Accordingly, the Applicant respectfully urges that the combination of Azuma, Katzela and Vaman is legally insufficient to make obvious the present claims under 35 U.S.C. §103 because of the absence of the Applicant's claimed novel "*reserving band-width resources to transmit packets on said at least one alternate path*" and "*subsequent to the reserving connections and reserving resources, detecting a failure of a particular trunk.*"

New Claims

The Applicant respectfully urges that the newly added claims 45-48 are also allowable over the prior art of record. Support for the additional features of claim 45 may be found at the bottom of page 53, and on page 54 of the specification, among other places.

New claim 45 forth (emphasis added):

45. A method comprising:
   determining a path to a destination, the path including one or more links;
   determining at least one alternate path having at least some of its one or more links differing from the links of the path;
   sending one or more set-up request messages along the at least one alternate path to request one or more nodes along the path reserve resources for, and enable, the at least one alternate path;
   reserving resources for, but not enabling, the at least one alternate path at a head node of the at least one alternate path;
   subsequent to steps of sending and reserving, detecting a link failure on the path; and
   rerouting traffic on the at least one alternate path in case of a link failure by enabling the at least one alternate path in the head

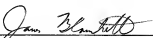**node, absent sending additional set-up messages to one or more nodes along the at least one alternate path.**

In contrast to prior techniques such as Azuma and Vaman, the Applicant novelly sends set-up request messages to enable an alternate path in nodes along the path, while not enabling the alternate path in a head node of the path. In this manner, the alternate path is "set up" in the network (with the exception of the head node) in advance. To enable the path, the head node merely needs to enable the path, typically a very rapid operation. Additional set-up messages need not be sent, avoiding what is typically a much slower operation. As such the Applicant novelly provides a much more rapid switch over to an alternate path than possible using prior art techniques. Neither Azuma nor Vaman touch upon the features claimed in claim 45. Accordingly, the Applicant respectfully urges the new claims should be allowed.

Should the Examiner believe telephonic contact would be helpful in the disposition of this Application, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

In summary, all the independent claims are believed to be in condition for allowance and therefore all dependent claims that depend there from are believed to be in condition for allowance. The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account

No. 03-1237.

Respectfully submitted,

James A. Blanchette
Reg. No. 51,477
CESARI AND MCKENNA, LLP
88 Black Falcon Avenue
Boston, MA 02210-2414
(617) 951-2500